October 2012
900715-001 Rev. 00

Installation Notes

TouchTunes PowerPack 725 Powered Subwoofer

(TouchTunes p/n 700723-001)

Contents

About This Document 1
Important Safety Information 2
Recommended Tools and Equipment 3
Unpacking and Checking Components 3
Dimensions and Weight 3
Specifications 4
PowerPack 725 Components 5
General Operating Instructions 6
Speaker Placement 6
Installation 7
Warranty Information 12
Contacting TouchTunes Support 13

About This Document

This document is intended for:

- Operators of TouchTunes digital jukeboxes.
- TouchTunes Field Service, Customer Support, and Sales personnel.

It explains how to install the TouchTunes PowerPack 725 Powered Subwoofer. Installing the PowerPack 725 Powered Subwoofer involves special safety considerations. It is therefore strongly recommended that you review this guide thoroughly before you begin.

Important Safety Information

- Read all safety instructions before installing this product.
- Keep all instructions for future reference.
- Heed all warnings.
- Follow all instructions.

CAUTION: The PowerPack 725 Powered Subwoofer bass box is heavy and represents a serious safety hazard if its mounting system should fail. Therefore, installation should only be performed by an experienced installer or licensed contractor that is familiar with standard rigging, mounting, and hanging practices, as recognized by a licensed engineer or governmental agency in your area.

CAUTION: Do not install PowerPack 725 components near any heat sources, such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

CAUTION: Do not defeat the safety purposes of the grounding-type plug. A grounding-type plug has two blades and a third grounding prong. The wider blade or the third grounding prong are provided for your safety. If the provided plug does not fit in your outlet, consult an electrician for replacement of the obsolete outlet.

CAUTION: Unplug this apparatus when unused for long periods of time.

Do not use this apparatus near water or moisture—Do not use this product near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool, or anywhere else that water or moisture are present.

Clean only with a dry cloth—and as directed in this document. Unplug this product from the wall outlet before cleaning.

Do not block any ventilation openings. Install in accordance with these instructions—To ensure reliable operation of the product and to protect it from overheating, put the product in a position and location that will not interfere with its proper ventilation. For example, do not place the product on a bed, sofa, or similar surface that may block the ventilation openings. Do not put it in a built-in system, such as a bookcase or a cabinet that may keep air from flowing through it ventilation openings.

Do not let objects or liquids enter the product—as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock.

Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

Use only attachments and accessories specified by TouchTunes.

Refer all services to qualified service personnel. Service is required when the apparatus has been damaged in any way: such as power-supply cord or plug is damaged; liquid has been spilled or objects have fallen into the apparatus; the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

To disconnect this apparatus you must unplug it from the wall outlet, therefore ensure during installation that the plug will be accessible after installation to facilitate disconnecting it from the wall outlet or equivalent.

To prevent risk of fire or electric shock, avoid overloading wall outlets, extension cords, integral convenience receptacles.

Note: Unauthorized modification of the PowerPack 725 Powered Subwoofer could void the user's authority to operate this equipment.

Note: The PowerPack 725 Powered Subwoofer was specifically designed for use with the DA950-U amplifier. The older DA-415 amplifier should not be used as a replacement, as it was not designed for use inside the PowerPack 725.

Recommended Tools and Equipment

The following list shows tools that you may require to install the PowerPack 725 Powered Subwoofer. Ensure that you have all tools before beginning installation.

- Philips #2 screwdriver
- Small flat-head screwdriver
- Cable clips and cable ties.
- Pre-wired Cat-5 network cable (or cable, crimp tool and RJ-45 connectors) to connect the jukebox computer to the amplifier.
- Flashlight, to facilitate installation in low-light situations.

Unpacking and Checking Components

The PowerPack 725 Powered Subwoofer ships in a single box. After unpacking, if it appears to be damaged in any way, do not attempt to use or install it. Notify TouchTunes or your local distributor immediately.

Verify that you have received the following components:

PowerPack 725 Powered Subwoofer (p/n 700723-001)		
1	Bass box, (p/n 700723-001) including:	
	1	DA950-U digital audio amplifier
	1	AC Power Cord
	2	Euroblock connectors, pre-installed onto DA950-U amplifier
1		Cat-5 patch cable, 50 ft.
1		This document (p/n 900715-001)

Dimensions and Weight

Bass Box

	Height	**Width**	**Depth**	**Weight**
Crated	23”	30”	16”	80 lbs.
Uncrated	19.7”	26.6”	12.8”	75 lbs.

Specifications

Sub-woofer

- Amplified sub-woofer
- Sealed-enclosure design for clean and crisp sound
- 2 low-frequency woofers, 10in., 250 W each

Amplifier

- Class-D Architecture
- Dynamic range of 117dB
- Over-current protection
- Thermal protection shutdow
- Mute input
- Turn-on and turn-off pop suppression
- High speed switching power supply
- Total harmonic distortion ≤ 0.002% (1W)
- Signal-to-noise ratio ≥ 100dB (A-weighted)
- One balanced input supporting daisy-chaining
- 3-Channel mode: One stereo output (midrange and high frequencies) and one bass output (low frequency)
- AC line voltage and frequency configurations: 100 to 120V AC
- Subwoofer: 475W at 4 ohms
- Satellites: 125W per channel at 4 ohms (minimum recommended impedance)
- Satellites: 65W per channel at 8 ohms

PowerPack 725 Components

The PowerPack 725 Powered Subwoofer has been specifically designed for use with TouchTunes jukeboxes. This speaker system features a bass box module with a built-in DA950-U 3-channel digital audio amplifier. The PowerPack 725 Powered Subwoofer can be mounted to the wall using a UL-listed VESA wall-mounting bracket, properly rated for supporting at least 75lbs and properly secured.

The PowerPack 725 Powered Subwoofer components are shown below.

PowerPack 725 Powered Subwoofer
with integrated DA950-U amplifier

Category 5 cable
(50 ft.)

AC Power Cord

PowerPack 725 Powered Subwoofer Components

General Operating Instructions

Power ON/OFF

The PowerPack 725 Powered Subwoofer does not have a power switch. The TouchTunes jukebox turns the PowerPack 725 Powered Subwoofer on and off.

Tone controls and DSP Equalization

Bass and treble adjustments are made using the sound mixer controls in the TouchTunes jukebox.

Note: When first setting up the PowerPack 725 Powered Subwoofer at a location, set the jukebox's tone controls to flat, initially, and turn off the software EQ option ("DSP EQ" on JCB-based jukeboxes or "Bass Boost" on Virtuo SmartJukes) to test with a "vanilla" signal. You can then adjust the tone controls or activate the software EQ option as required. TouchTunes strongly recommends that you listen to a variety of different music selections and genres, at the lowest and highest volumes you intend to permit for use at your locations, before finalizing these settings.

Remote volume control

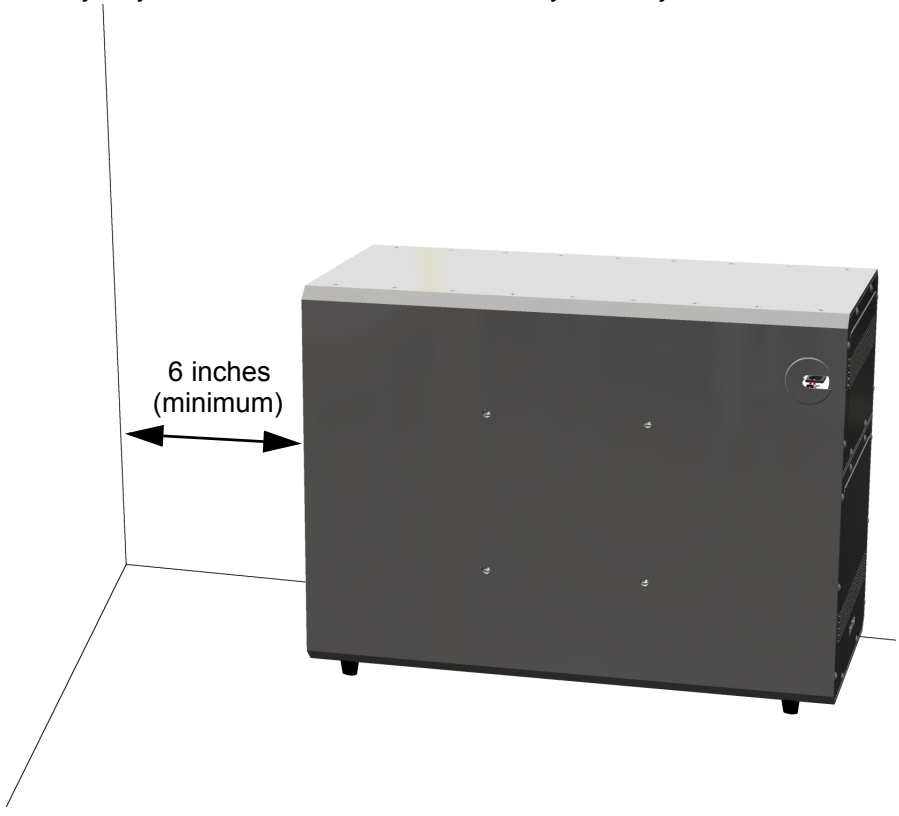
The volume control for the PowerPack 725 Powered Subwoofer is located in the sound mixer screen on the TouchTunes jukebox, and on the RF remote control included with the jukebox. Do not attempt to wire an in-line volume control into the category 5 cable.

Speaker Placement

Optimum performance of your PowerPack 725 Powered Subwoofer is determined by placement of the system components. Follow the general guidelines below to ensure the best possible performance from your system.

Bass Box Placement

The PowerPack 725 bass box can be placed with one side against a wall. Either side is acceptable, all that is required is to route the cables to come out on the appropriate side. Avoid placing the bass box's port openings directly against a reflecting surface. For best results place the side with the port openings at least six inches from the wall. Make sure the port openings are not covered in any way and are at least three inches away from objects.



Bass Box Placement

TIP: As a rule of thumb for placing bass reflecting speakers, the distance between the bass port and the reflecting surface should be approximately equal to the size of the bass port itself.
For best results, do not position the bass port more than 12 inches away from the reflecting surfaces. Using greater distances will result in diminished bass response.

Satellite Speaker Placement

Follow the recommendations that came with the satellites you will be using. Here are some general considerations to keep in mind when positioning and installing satellites:

- Satellite speakers work best when located in corners.
- Keep a satellite speaker within 25 feet of any listener.
- Do not position satellite speakers more than 25 feet away from the bass box.
- Mount satellite speakers between 6 feet and 12 feet high.
- Define the listening area and aim the satellite speakers towards the center of the listening area.
- Always maintain a minimum of 4 feet between satellite speakers.
- In 4-satellite configurations, to maximize stereo coverage, if the two satellite speakers for one channel are to be placed less than 20 feet apart, they should both be placed on one side of the listening area (in left-left, right-right order). If the two satellite speakers for one channel are to be placed more than 20 feet apart, they should both be alternated with the opposite channel satellites (in left-right, left-right order).
- Do not aim satellite speakers directly into a corner.
- When placing satellite speakers near the intersection of two walls and a ceiling, use unequal distance spacing from vertical and horizontal surfaces. Example: 2 feet from the ceiling and 1 foot from adjacent wall.
- For stereo installations, satellites must be within 25 feet of each other.

Installation

Wall-mounting the Bass Box

The PowerPack 725 Powered Subwoofer is designed to be wall-mounted using a VESA-standard wall-mount bracket of the same kind used for wall-mounting flat-screen HDTVs, which must be UL-rated to support at least 75 pounds.

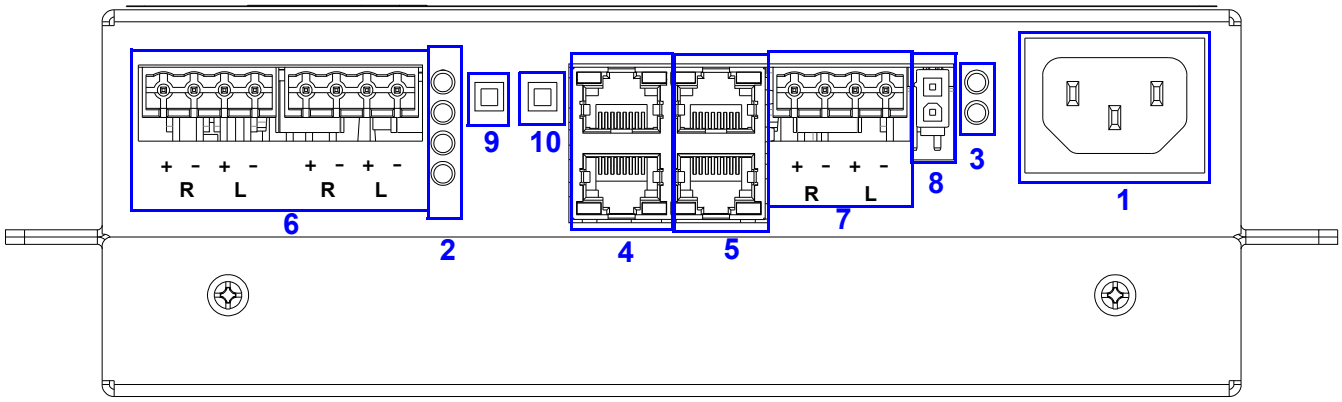
Note: It is the installer's responsibility to choose a position, mounting method, and fasteners consistent with local building codes and regulations.

CAUTION: The PowerPack 725 bass box is heavy and represents a serious safety hazard if its mounting system should fail. Installation of the mounting system should only be performed by an experienced installer or licensed contractor who is familiar with standard rigging, mounting and hanging practices as recognized by a licensed engineer or government agency in your area.

DA950-U Amplifier Connector Panel

The DA950-U amplifier installed in the PowerPack 725 Powered Subwoofer's bass box is shown in the figure below.

Note: The DA950-U amplifier provides RJ45 input and output connectors to enable daisy-chaining of components.



DA950-U Amplifier

1. **Power connector:** Connect the supplied power cord here. The DA950-U will automatically turn on when the power cord is plugged into a wall outlet (AC 120V /60Hz MAX 1000W). There is no power switch.

CAUTION: Do not connect the AC power cord to a wall outlet until all audio connections have been completed.

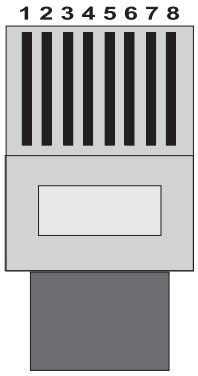
2. **Power / Settings Lights:**
   - Bass Boost: Lights up when bass boost is on. *Should always be on while this amplifier is in use inside the PowerPack 725.*
   - 3-CH Mode: Lights up when 3-channel mode is on. *Should always be on while this amplifier is in use inside the PowerPack 725.*
   - Power Amp #1: Lights up when power amp #1 is on
   - Power Amp #2: Lights up when power amp #2 is on
3. **Protection mode indicators, channels #1 and #2:** lights up when a channel has gone into over-current protection mode or thermal protection mode.
4. **Balanced audio input/output connectors (unused in this configuration)**
5. **Balanced audio input/output connectors:** Two RJ45 connectors are provided to connect the DA950-U to a jukebox and/or other audio equipment via standard category 5 cable. Wired in parallel. One should be used as input, and the other can then be used as a "thru" connection.

You can purchase pre-wired cable, or you can wire your own cable as follows:

Straight-through category 5 cable wiring

Color	Near End		Far End	Color
white + orange	1	·····	1	white + orange
orange	2	·····	2	orange
white + green	3	·····	3	white + green
blue	4	·····	4	blue
white + blue	5	·····	5	white + blue
green	6	·····	6	green
white + brown	7	·····	7	white + brown
brown	8	·····	8	brown

RJ45 connector



RJ45 Cable Wiring

6. **Satellite speaker outputs:** The two connectors, wired in parallel. Provides two channels (stereo) of output, making it easy to wire up to two speakers per channel for a total of four speakers. 125W / 4 ohms per channel.

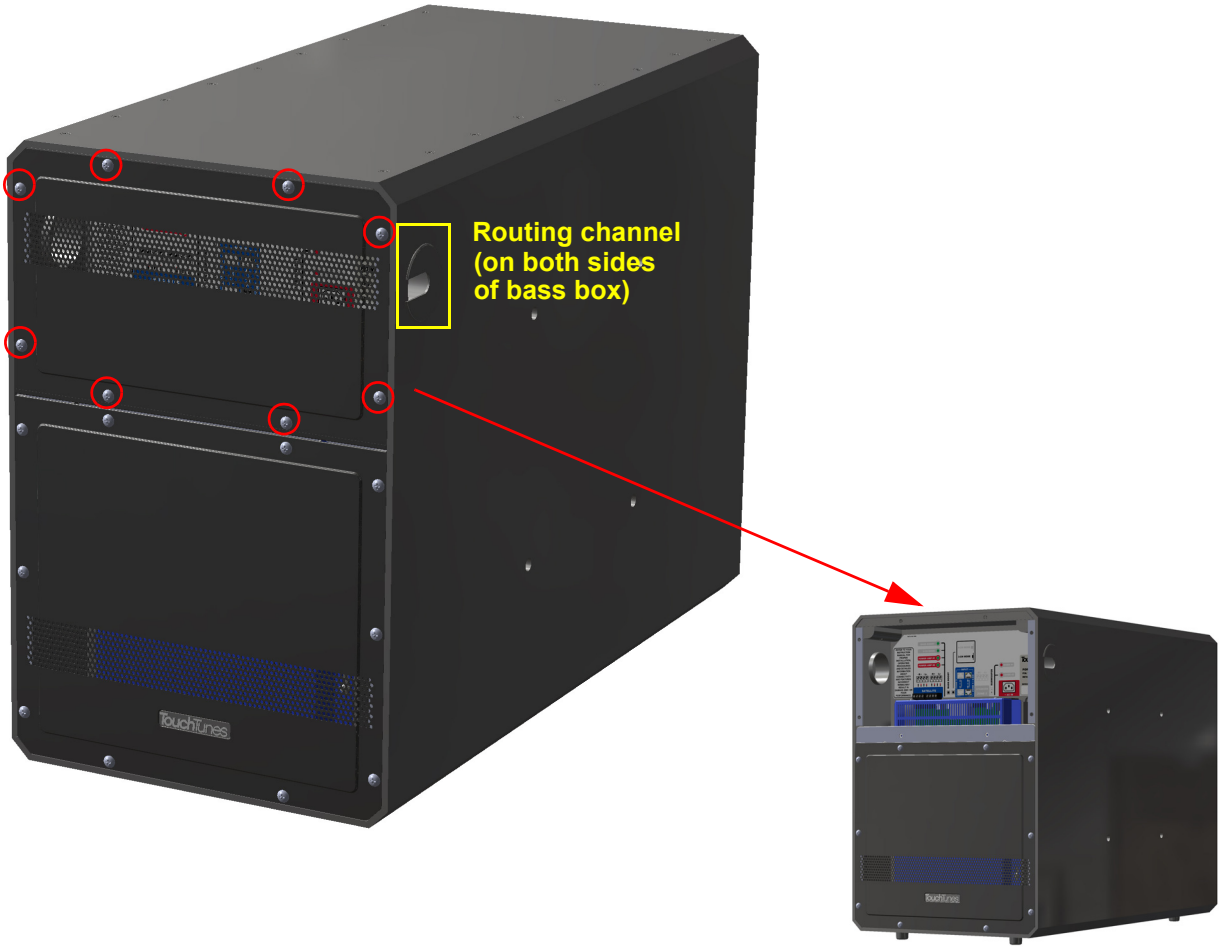
7. **Speaker outputs (unused in this configuration)**
8. **Bass channel audio output connector:** Provides audio out at 475W / 4 ohms for the subwoofers inside the PowerPack 725.
9. **Bass Boost:** Activates bass boost when pushed in. Must be left permanently on while this amplifier is used by the PowerPack 725.
10. **Channel Mode:** 3-channel mode when pushed in, 4-channel mode otherwise. Must be kept permanently set to 3-channel mode while this amplifier is used by the PowerPack 725.

Making Connections

Your PowerPack 725 Powered Subwoofer is shipped without external satellite speakers and is designed for you to use your own satellites. Two 4-terminal Euroblock connectors are included to connect your satellites to the jukebox's amplifier. These Euroblock connectors are preinstalled on the DA950-U amplifier.

This section explains how to make connections between the jukebox computer, EQ box, PowerPack 725 3-channel amplifier, external satellite speakers, and bass box.

1. Remove the grille from the amplifier side of the bass box by unfastening the eight (8) screws, and put the grille aside.

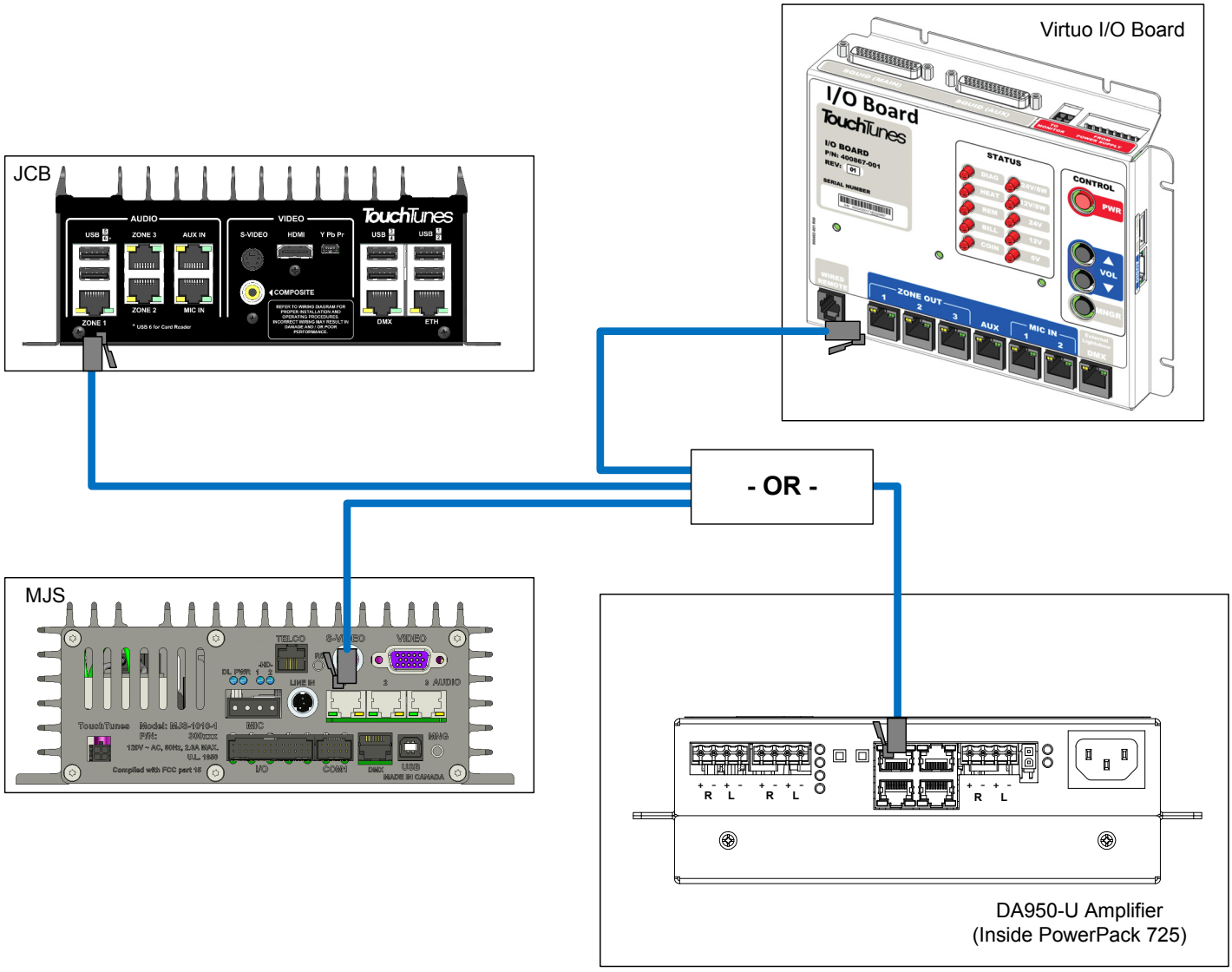


Removing Grille to Expose the Amplifier

Note: Pass all cables through the cable routing channel of the bass box.

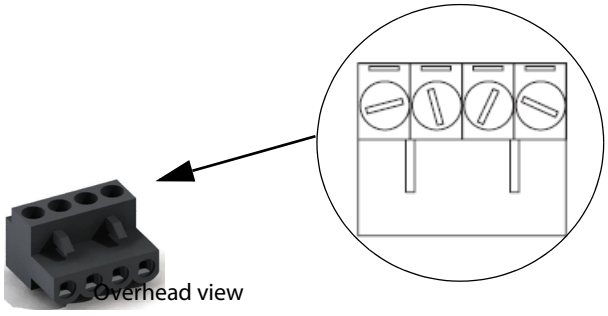
2. Unlock and open your jukebox. Decide which Zone output you wish to use with the PowerPack 725.

3. Connect the category 5 cable with RJ45 connectors from the chosen Zone output on the jukebox computer to the input connector on the amplifier inside the PowerPack 725.



Connecting the Jukebox Computer to the Amplifier

4. Prepare the satellite speaker cables by stripping the ends of their connector wires, exposing approximately 1/4” of wire.
5. Locate the supplied four-slot Euroblock connector for the satellite speakers.
6. Loosen the screws along the top of the connector using a flat-head screwdriver, if necessary.



Euroblock terminals

7. Wire the ends of the satellite speaker wires to the Euroblock connector and ensure correct polarity (it is standard to use red for positive and black for negative.) Using a flat-head screwdriver, tighten the screws to secure the speaker cables to the connector.

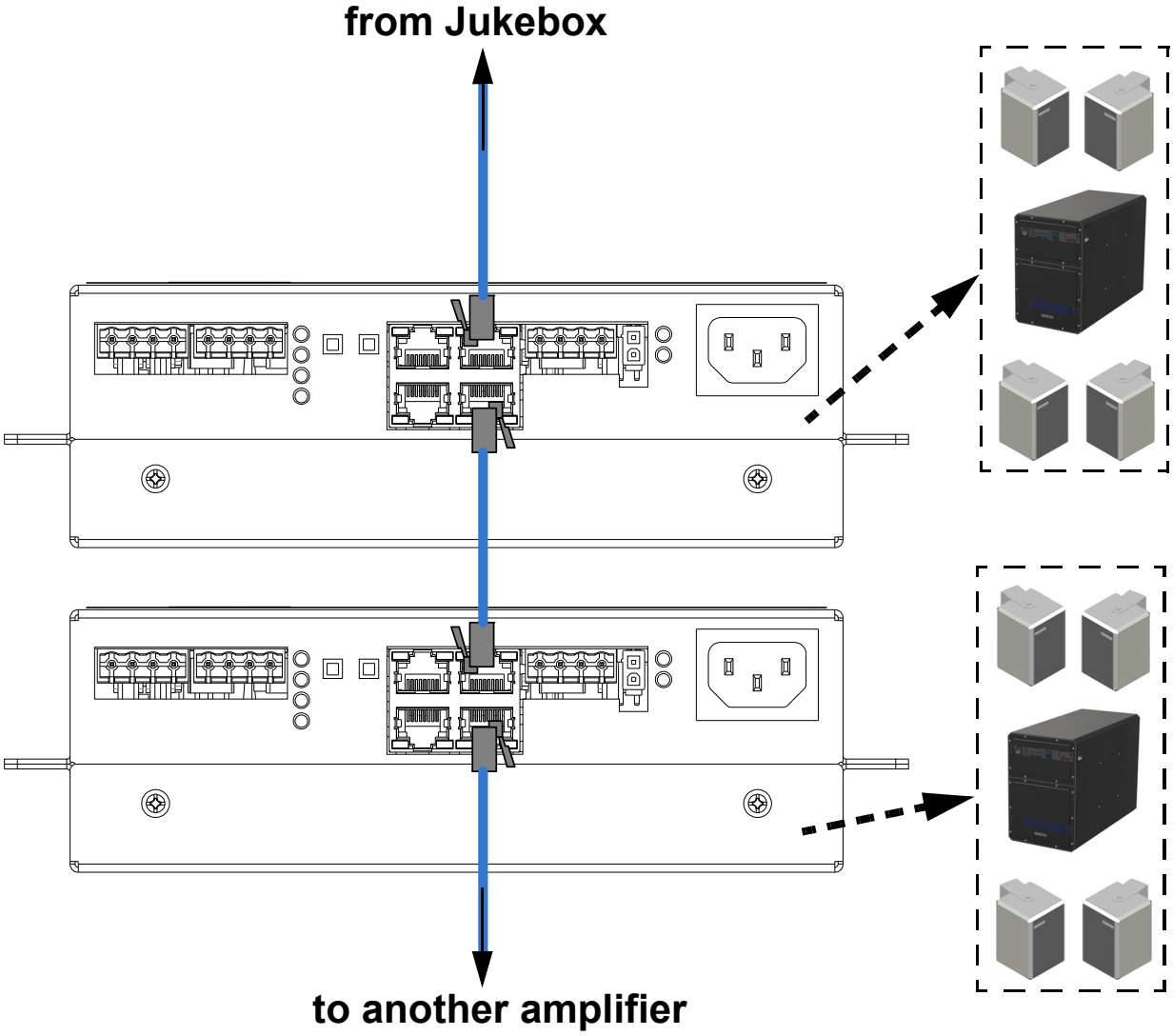
Caution: Review your speaker circuit, and ensure that the resulting impedance is in the range between 4 and 8 ohms. Values outside this range will result in either poor performance, or the amplifier's over-current and/or thermal protection to activate, preventing audio output.

8. If it was not already done, connect the PowerPack 725 subwoofer to the DA950-U by pressing its connector into the bass channel audio output connector (6) on the amplifier.
9. **Optional:** Connect the DA950-U to other audio equipment (for example, another PowerPack 725 Powered Subwoofer) using a standard category 5 cable with RJ45 connectors. See "Daisy-Chaining PowerPack 725 Powered Subwoofers" on page 11.
10. Power up the unit by connecting the power cord between a properly grounded wall outlet (AC 120V /60Hz MAX 1000W) and the power connector on the amplifier.

Daisy-Chaining PowerPack 725 Powered Subwoofers

The PowerPack 725 Powered Subwoofer provides daisy-chaining capability, enabling you to connect additional PowerPack 725 systems to achieve increased sound coverage for large areas.

The following figure illustrates how to daisy-chain multiple PowerPack 725 Powered Subwoofers.



Daisy-Chaining PowerPack 725 Powered Subwoofers

Up to 10 PowerPack 725 Powered Subwoofers can be daisy-chained for a single zone in this manner.

Note: Best results are achieved by using only PowerPack 725 Powered Subwoofers—whose EQ curve has been tailored specifically for that system—in a daisy-chained configuration.
Although other types of amplifiers can be used, the resulting sound quality may be unpredictable. In addition, the use of other amplifiers will require using a Line-Out DI box (not included), which may be ordered from TouchTunes (p/n 700168-002).

Care and Cleaning

To clean your speakers, dust them with a clean, dry cloth or vacuum cleaner attachment. Never use abrasives, solvent-based cleaners, or harsh detergents.

If you wish to use a cleaner, apply onto the cleaning cloth, not directly onto the product. Test a small area first, as some cleaning products may damage some of the surfaces.

Do not use cleaning agents on the drive units.

Warranty Information

TouchTunes warrants this product to be free from defects in materials and workmanship (subject to the terms set forth below) for a period of 1 year from the date of purchase. During the warranty period, TouchTunes will repair or replace (at TouchTunes' option) this product or any defective parts.

To obtain warranty service, please call TouchTunes for instructions. (See "Contacting TouchTunes Support" .) You will require a Return Authorization (RA), and you will need to ship this product in either its original packaging or packaging affording an equal degree of protection.

- Before a purchaser ships a product back to TouchTunes™, the purchaser must obtain a valid RA number. Boxes received without an authorized RA Number shall be shipped back.
- Authorized RA Numbers shall expire 30 days after they are issued.
- Only the TouchTunes product and quantity specified on the original RA request can be returned with the RA Number issued.
- If returning additional products to TouchTunes™, a new RA Number shall be required.
- If TouchTunes receives a shipment containing products not authorized for return on that RA Number, we shall return them as is.

This warranty is invalid if:

- The factory-applied serial number has been altered or removed from this product, or
- This product was not purchased from TouchTunes or an authorized distributor.

This warranty does not cover cosmetic damage or damage due to misuse, abuse, negligence, acts of God, accident, commercial use or modification of, or to any part of, the product. This warranty does not cover damage due to improper operation, maintenance or installation, or attempted repair by anyone other than TouchTunes. Any unauthorized repairs will void this warranty.

Contacting TouchTunes Support

If you need help with or have questions about this document, contact TouchTunes by:

- Using the email links on the Contacts page on the TouchTunes Dashboard at https://operator.touchtunes.com.
- Calling TouchTunes 24/7 Service Hotline at 847-353-1954.

To help us assist you more effectively with problem reports, the following information may be required when contacting TouchTunes Support:

- Jukebox ID
- Jukebox model (e.g., Virtuo, Allegro MX-1, Ovation II).
- The serial number of any component you believe to be defective.
- The date/time of the problem.
- Actions performed immediately before the problem occurred.
- Any additional comments.

If you require assistance with this or any other TouchTunes product, please call or email technical support. We value your comments.

TouchTunes Interactive Networks, Inc.	**TouchTunes Interactive Networks, Inc.**	**Technical Support**
400 Sainte Croix Avenue, Suite 200 E Montreal, Quebec, Canada, H4N 3L4	3455 Salt Creek Lane, Suite 100 Arlington Heights, IL 60005 USA	847-353-1954 www.touchtunes.com

Copyright © 2012 TouchTunes Interactive Networks